



CALS TEST NETWORK

AFCTN Test Report 93-032

AFCTB-ID
92-050



Raster Transfer Test

using:



Raytheon Company's Data



MIL-R-28002A (Raster)

Quick Short Test Report

01 September 1992

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Prepared for

Electronic Systems Center

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Prepared By

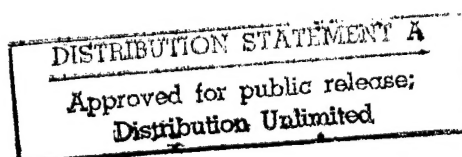
Air Force CALS Test Bed
Wright-Patterson AFB, OH 45433

AFCTB Contact

Gary Lammers
(513) 427-2295

AFCTN Contact

Mel Lammers
(513) 427-2295



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1. Introduction

1.1 Background

The Department of Defense (DoD) Air Force Continuous Acquisition and Life-Cycle Support (CALS) Test Network (AFCTN) is conducting tests of the military standard for the Automated Interchange of Technical Information, MIL-STD-1840A, and its companion suite of military specifications. The AFCTN is a DoD sponsored confederation of voluntary participants from industry and government managed by the Electronic Systems Center (ESC).

The primary objective of the AFCTN is to evaluate the effectiveness of the CALS standards for technical data interchange and to demonstrate the technical capabilities and operational suitability of those standards. Two general categories of tests are performed to evaluate the standards; formal and informal.

Formal tests are large and comprehensive, which follow a written test plan, require specific authorization from the DoD, and may take months to prepare, execute, and report.

Informal tests are quick and short, used by the AFCTN technical staff, to broaden the testing base. They include representative samples of the many systems and applications used by AFCTN participants. They also allow the AFCTN staff to gain feedback from many industry and government interpretations of the standards, to increase the base of participation in the CALS initiative, and respond to the many requests for help that come from participants. Participants take part voluntarily, benefit by receiving an evaluation of their latest implementation (interpretation) of the standards, interact with the AFCTN technical staff, gain experience using the standards, and develop increased confidence in them. The results of informal tests are reported in Quick Short Test Reports (QSTRs) that briefly summarize the standard(s) tested, the hardware and software used, the nature of the test, and the results.

1.2 Purpose

The purpose of the informal test, reported in this QSTR, was to analyze Raytheon Company's interpretation and use of the CALS standards in transferring technical publication data. Raytheon used its CALS Technical Data Interchange System to produce data, in accordance with the standards, and delivered it to the AFCTN technical staff on a 9-track magnetic tape.

2. Test Parameters

Test Plan: AFCTB 92-050

Date of
Evaluation: 1 September 1992

Evaluator: George Elwood
Air Force CALS Test Bed
HQ ESC/ENCP
Suite 200
4027 Colonel Glenn Hwy
Dayton OH 45431-1672

Data
Originator: Lynn B. Wiles
Raytheon Company
Missile System Division
350 Lowell Street
Andover MA 01810

Data
Description: Technical Manual Test
1 Document Declaration file
52 Raster files

Data
Source System:

Raster

HARDWARE
Unknown

SOFTWARE
Unknown

Evaluation Tools Used:

MIL-STD-1840A (TAPE)
SUN 3/280

AFCTN Tapetool v1.2.8 UNIX
AGFA Compugraphics CAPS/CALS v40.4

MIL-R-28002 (Raster)

SUN SparcStation 2

ArborText *g42tiff*

AFCTN *validg4*

AFCTN *calstb.475*

Island Graphics *IslandPaint v3.0*

Rosetta Technologies *Preview*

Cheetah

Inset Systems *HiJaak v2.02*

Software Publishing Corporation

(SPC) *Harvard Graphics v3.0*

Xerox Ventura Publisher

Standards

Tested:

MIL-STD-1840A

MIL-R-28002A

3. 1840A Analysis

3.1 External Packaging

The tape arrived at the Air Force CALS Test Bed (AFCTB) enclosed in a box in accordance with the ASTM D 3951. The exterior of the box was marked with the magnetic tape warning label, as required by MIL-STD-1840A, para. 5.3.1.3.

The tape was enclosed in a barrier bag as required by MIL-STD-1840A, para. 5.3.1.2. Inspection of the tape reel showed the label indicating the recording density, as required by MIL-STD-1840A, para. 5.3.1. Enclosed in the box was a packing list showing all files recorded on the tape.

3.2 Transmission Envelope

The 9-track tape received by the AFCTB contained MIL-STD-1840A files. The files were named per the standard conventions.

3.2.1 Tape Formats

The 1840A tape was run through the AFCTN *Tapetool v1.2.8* utility. No errors were encountered while evaluating the contents of the tape labels.

The tape was also read using AGFA's *CAPS read1840A* tape utility without any reported problems.

3.2.2 Declaration and Header Fields

No errors were reported in the Document Declaration file or data header records.

4. IGES Analysis

No Initial Graphics Exchange Specification (IGES) files were included on the tape.

5. SGML Analysis

No Standard Generalized Markup Language (SGML) files were included on the tape.

6. Raster Analysis

The tape contained 52 Raster images. All 52 images were checked using the AFCTN *validg4* utility. This utility reported all files were valid MIL-R-28002A files. Selected files were imported into the AFCTN *calstb.475* viewing utility without a reported problem. The images were clean with no orphan pixels noted. The images were scanned straight. File D001R046 displayed a slight notable angle.

A selection of files were converted using Rosetta Technologies' *Prepare* with no reported problems. The resulting files were viewed and printed. The hard copies of these files are included in the Appendix of this report.

The same files were converted using ArborText's *g42tiff* with no reported problems. The resulting files were viewed and printed using Island Graphics' *IslandPaint*.

The same files were converted to an IMG format on the PC using Inset Systems' *HiJaak* with no reported problems. They were also converted to a PCX format. The PCX format files were seen through a Viewer with no problems. The IMG files were imported into the Xerox Ventura *Publisher* and a hard copy is included in the Appendix of this report.

The Raster files meet the CALS MIL-R-28002A specification.

7. CGM Analysis

No Computer Graphics Metafile (CGM) files were included on the tape.

8. Conclusions and Recommendations

In summary, the MIL-STD-1840A tape from Raytheon Company was correct. The tape could be read properly using the AFCTN *Tapetool* and AGFA's *read1840A* without any reported errors.

The Raster images on the tape were all valid files. They were converted, viewed, and printed without a problem. The quality of the images was good.

The tape provided by the Raytheon Company meets the CALS MIL-STD-1840A requirements.

9. Appendix A - Tapetool Report Logs

9.1 Tape Catalog

Air Force CALS Test Network Catalog Evaluation - Version 1.2; Release Number 8

Standards referenced:

MIL-STD-1840A (1987) - Automated Interchange of Technical Information

ANSI X3.27 (1987) - File Structure and labeling of Magnetic Tapes
for Information Interchange

ANSI X3.4 (1986) - Coded Character Sets - 7 Bit ASCII

Tue Sep 1 07:55:08 1992

MIL-STD-1840A File Catalog

File Set Directory: /cals/tapetool8/Set083

Page: 1

| File Name | File Type | Record Format/ Length | Block Length/Total | Selected/ Extracted |
|--------------------------------------|----------------------|-----------------------------|-----------------------|------------------------|
| D001 | Document Declaration | D/00260 | 02048/000001 | Extracted |
| D001R001 | Raster | F/00128 | 02048/000022 | Extracted |
| D001R002 | Raster | F/00128 | 02048/000020 | Extracted |
| D001R003 | Raster | F/00128 | 02048/000027 | Extracted |
| <<<<< PART OF LOG REMOVED HERE >>>>> | | | | |
| D001R050 | Raster | F/00128 | 02048/000028 | Extracted |
| D001R051 | Raster | F/00128 | 02048/000030 | Extracted |
| D001R052 | Raster | F/00128 | 02048/000028 | Extracted |

Catalog Process terminated normally.

9.2 Tape Evaluation Log

Air Force CALS Test Network Tape Evaluation - Version 1.2; Release Number 8
Standards referenced:

ANSI X3.27 (1987) - File Structure and labeling of Magnetic Tapes
for Information Interchange

ANSI X3.4 (1986) - Coded Character Sets - 7 Bit ASCII

Tue Sep 1 07:53:57 1992

ANSI Tape Import Log

Allocating tape drive /dev/rmt0...

/dev/rmt0 allocated.

VOL1CALS01

4

Label Identifier: VOL1
Volume Identifier: CALS01
Volume Accessibility:
Owner Identifier:
Label Standard Version: 4

HDR1D001 CALS0100010001000000 92227 00000 000000

Label Identifier: HDR1
File Identifier: D001
File Set Identifier: CALS01
File Section Number: 0001
File Sequence Number: 0001
Generation Number: 0000
Generation Version Number: 00
Creation Date: 92227
Expiration Date: 00000
File Accessibility:
Block Count: 000000
Implementation Identifier:

HDR2D0204800260

00

Label Identifier: HDR2
Recording Format: D
Block Length: 02048
Record Length: 00260
Offset Length: 00

***** Tape Mark *****

Actual Block Size Found = 2048 Bytes.

Number of data blocks read = 1.

***** Tape Mark *****

EOF1D001 CALS0100010001000000 92227 00000 000001

Label Identifier: EOF1
File Identifier: D001
File Set Identifier: CALS01
File Section Number: 0001
File Sequence Number: 0001
Generation Number: 0000
Generation Version Number: 00
Creation Date: 92227
Expiration Date: 00000
File Accessibility:
Block Count: 000001
Implementation Identifier:

EOF2D0204800260

00

Label Identifier: EOF2
Recording Format: D
Block Length: 02048
Record Length: 00260
Offset Length: 00

***** Tape Mark *****

HDR1D001R001 CALS0100010002000000 92227 00000 000000

Label Identifier: HDR1
File Identifier: D001R001
File Set Identifier: CALS01
File Section Number: 0001
File Sequence Number: 0002
Generation Number: 0000
Generation Version Number: 00
Creation Date: 92227
Expiration Date: 00000
File Accessibility:
Block Count: 000000

Implementation Identifier:

HDR2F0204800128

00

Label Identifier: HDR2
Recording Format: F
Block Length: 02048
Record Length: 00128
Offset Length: 00

***** Tape Mark *****

Actual Block Size Found = 2048 Bytes.

Number of data blocks read = 22.

***** Tape Mark *****

EOF1D001R001

CALS0100010002000000 92227 00000 000022

Label Identifier: EOF1
File Identifier: D001R001
File Set Identifier: CALS01
File Section Number: 0001
File Sequence Number: 0002
Generation Number: 0000
Generation Version Number: 00
Creation Date: 92227
Expiration Date: 00000
File Accessibility:
Block Count: 000022
Implementation Identifier:

EOF2F0204800128

00

Label Identifier: EOF2
Recording Format: F
Block Length: 02048
Record Length: 00128
Offset Length: 00

***** Tape Mark *****

<<<<< PART OF LOG REMOVED HERE >>>>>

***** Tape Mark *****

EOF1D001R052 CALS0100010053000000 92227 00000 000028

Label Identifier: EOF1
File Identifier: D001R052
File Set Identifier: CALS01
File Section Number: 0001
File Sequence Number: 0053
Generation Number: 0000
Generation Version Number: 00
Creation Date: 92227
Expiration Date: 00000
File Accessibility:
Block Count: 000028
Implementation Identifier:

EOF2F0204800128

00

Label Identifier: EOF2
Recording Format: F
Block Length: 02048
Record Length: 00128
Offset Length: 00

***** Tape Mark *****

***** Tape Mark *****

End of Volume CALS01

End Of Tape File Set

Deallocating /dev/rmt0...

Tape Import Process terminated normally.

9.3 Tape File Set Validation Log

Air Force CALS Test Network File Set Evaluation - Version 1.2; Release Number 8

Standards referenced:

MIL-STD-1840A (1987) - Automated Interchange of Technical Information

MIL-R-28002 (1989) - Raster Graphics Representation In Binary
Format, Requirements For

Tue Sep 1 07:55:09 1992

MIL-STD-1840A File Set Evaluation Log

File Set: Set083

Found file: D001

Extracting Document Declaration Header Records...

Evaluating Document Declaration Header Records...

srcsys: Raytheon MSD, 350 Lowell St. Andover, MA 01810 R. B. Goodwin, Andover Eng'g

ANF-B16 (508) 470-7425

srcdocid: PDPATRIOT 18876 AX UDCTN C

srcrelid: NONE

chglvl: ORIGINAL

dteisu: 19920814

dstsys: DSREDS

dstdocid: NONE

dstrelid: NONE

dtetrm: 19920814

dlvacc: NONE

filcnt: R52

ttlcls: UNCLASSIFIED

doccls: UNCLASSIFIED

doctyp: Product Data

docttl: Patriot Missile System

Found file: D001R001

Extracting Raster Header Records...

Evaluating Raster Header Records...

srcdocid: SDSD11444470 18876 F AX 00010001UDCTN0001 CC

dstdocid: SD11444470

txtfilid: NONE

figid: NONE

srcgph: NONE

doccls: UNCLASSIFIED

rtype: 1
rorient: 000,270
rpelcnt: 004549,003525
rdensty: 0200
notes: ANTENNA ELEMENT-IFF INTERCONNECTING DIAG.

Saving Raster Header File: D001R001_HDR
Saving Raster Data File: D001R001_GR4

<<<<< PART OF LOG REMOVED HERE >>>>>

Found file: D001R052
Extracting Raster Header Records...
Evaluating Raster Header Records...

srcdocid: ED11449203 18876 C AX 00010001UDCTN0001 CC
dstdocid: 11449203
txtfilid: NONE
figid: NONE
srcgph: NONE
doccls: UNCLASSIFIED
rtype: 1
rorient: 000,270
rpelcnt: 004545,003520
rdensty: 0200
notes: FLANGE, TUBE

Saving Raster Header File: D001R052_HDR
Saving Raster Data File: D001R052_GR4

Evaluating numbering scheme...
No errors were encountered during numbering scheme evaluation.
Numbering scheme evaluation complete.

Checking file count...
No errors were encountered during file count verification.
File Count verification complete.

No errors were encountered in Document D001.

No errors were encountered in this File Set.

MIL-STD-1840A File Set Evaluation Complete.

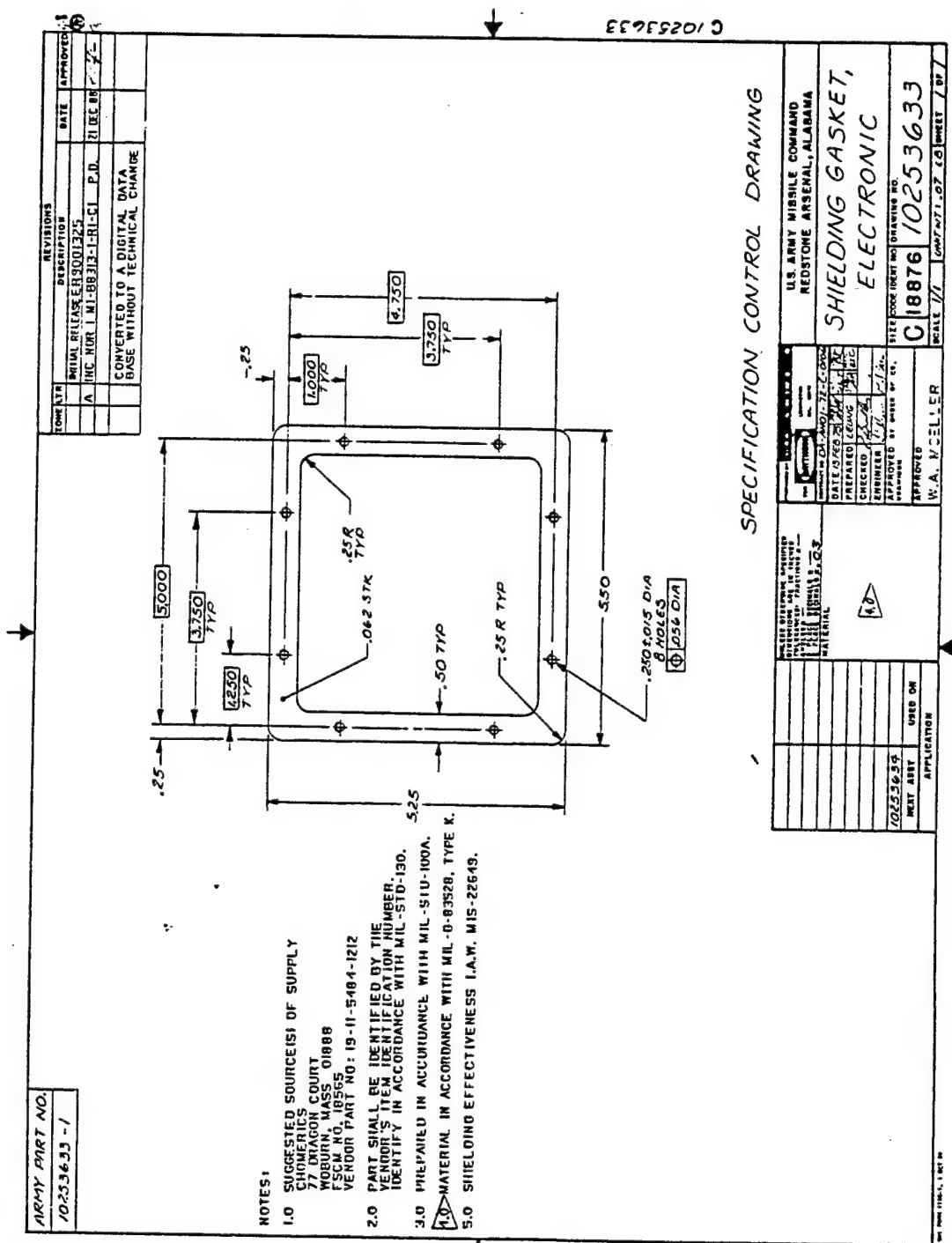
9.4 Other Tape Reading LOGs

No reported errors.

10.1.1 Output IslandPaint

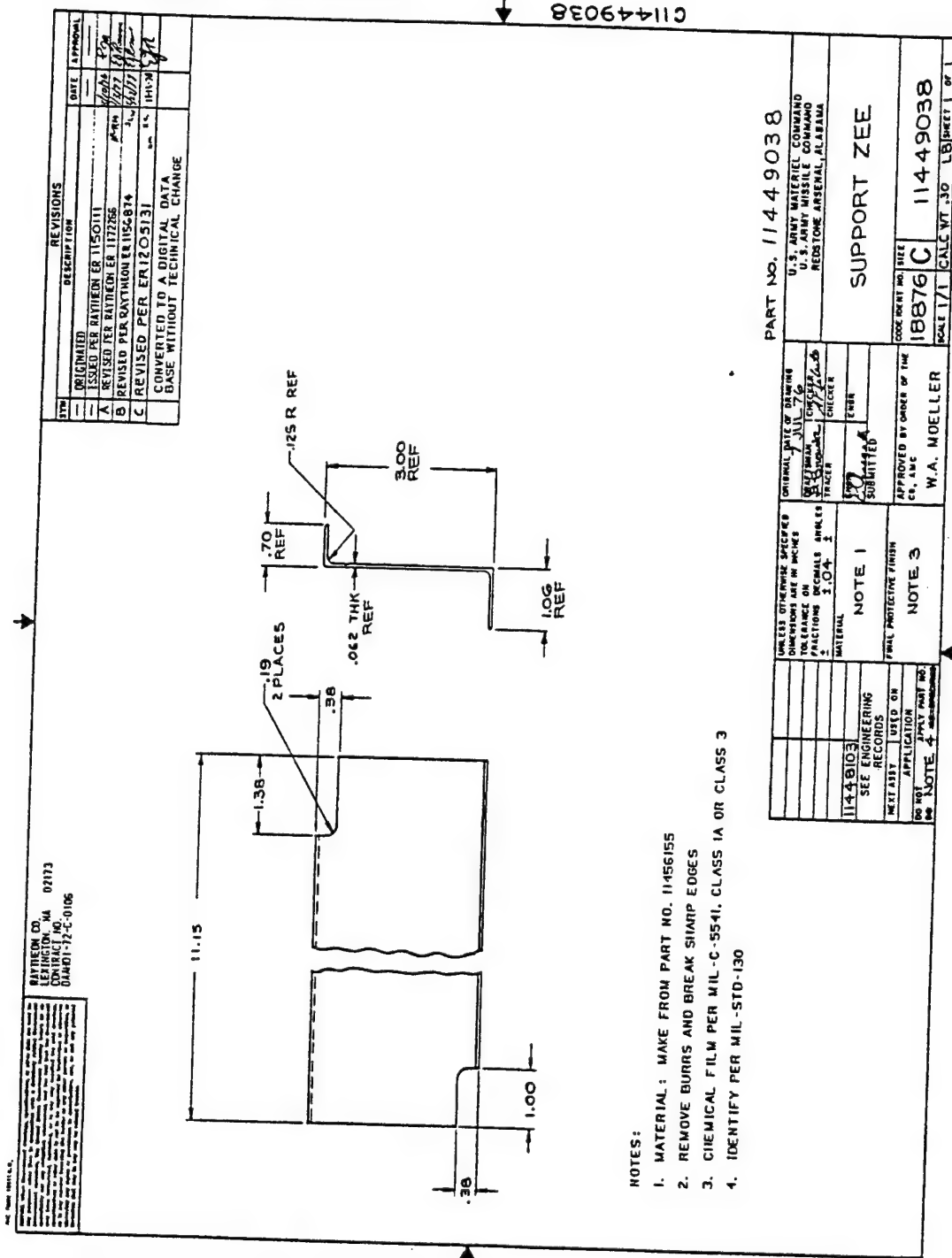


10.1.2 Output Preview



10.2 File D001R029

10.2.1 Output IslandPaint

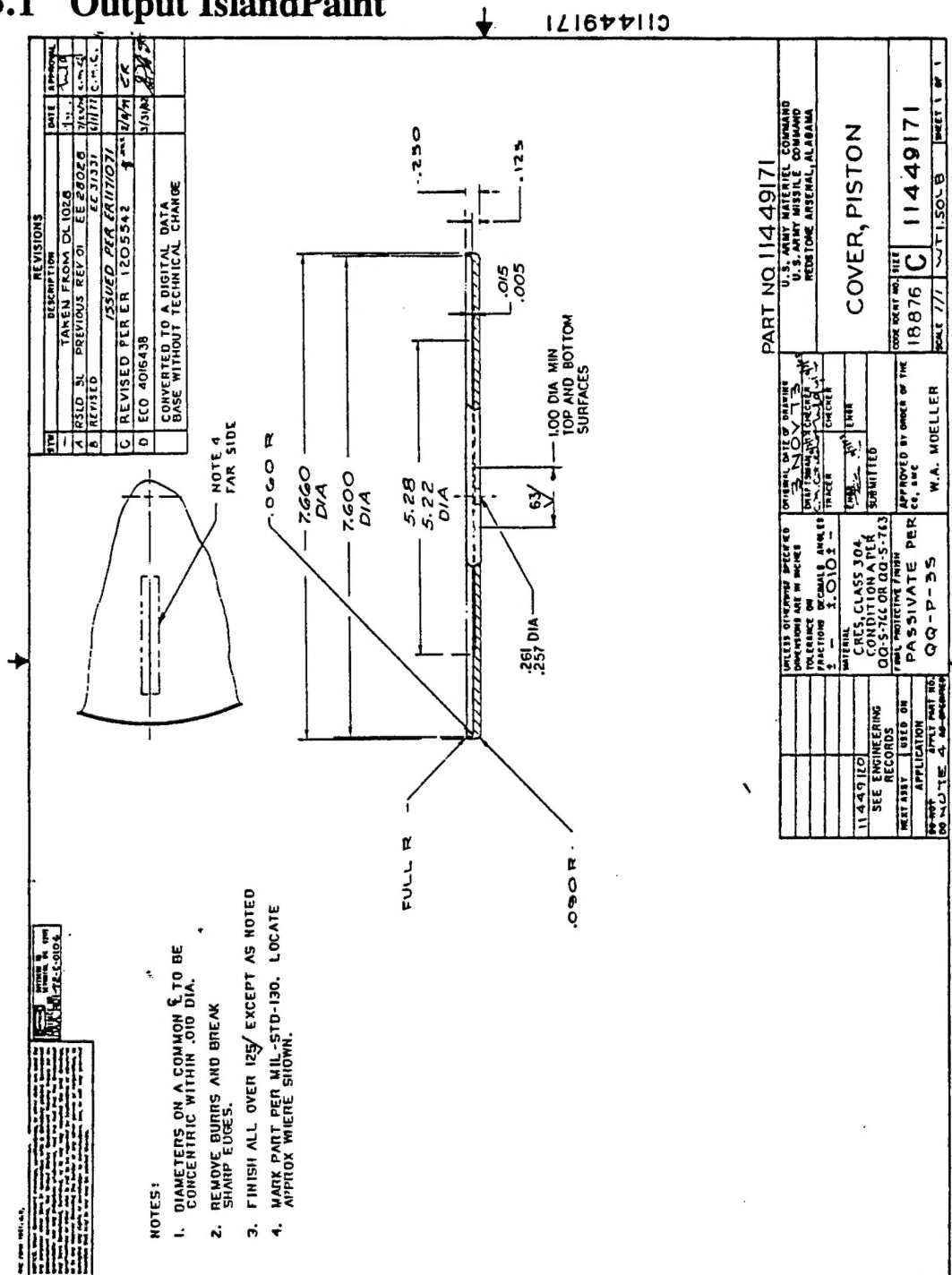


10.2.2 Output Preview

[illegible]

10.3 File D001R046

10.3.1 Output IslandPaint

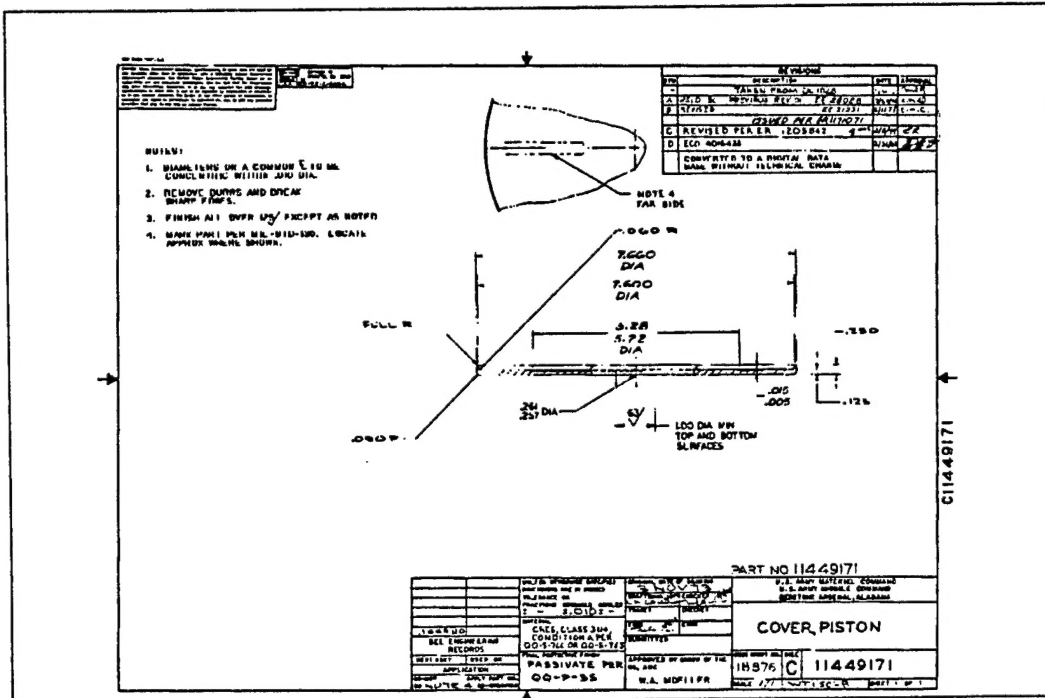


[illegible]

[illegible][illegible]

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10.3.4 Output Ventura Publisher - D001R046



D001R046